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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,915	04/09/2001	Wataru Fushimi	1163-0334P	5220
2292	7590	03/01/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			BRANT, DMITRY	
			ART UNIT	PAPER NUMBER
			2655	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/827,915

Applicant(s)

WATARU FUSHIMI, ET AL.

Examiner

Dmitry Brant

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/09/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is asked to include a cross-reference to related co-pending application 09/664,096 in a **Related Applications** section, immediately following the **Title of the Invention** on page 1 of the **Specification**.

Claim Objections

2. Claim 11 is objected to because of the following informalities:

The claim is missing "is reduced" (Page 59, line 15). The examiner read the claim as "the coded speech signal whose information amount is reduced by said information reduction means." Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being obvious over Gay et al. (4,924,480) in view of Strawczynski et al. (6,006,189).

The recitation of "variable bit rate function of varying a transmission bit rate of the coded speech signal in accordance with a load on the equipment" has not been given patentable weight

because the recitation occurs in the preamble. Here, the body of the claim does not depend on the “varying a transmission rate ... in accordance with a load on the equipment” for completeness and, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

As per claim 1, Gay et al. disclose a switch comprising:

- *tandem pass-through* function (Col. 2, lines 19-24), so that a switch has a mode where it detects the already encoded signals and passes them through in encoded form rather than decoding and encoding the signals again.
- padder (elem. 232, FIG.2) for constructing pseudo-speech signal with coded speech (*dummy data adding means*)
- stripper (elem. 212, FIG. 2) for extracting coded speech from pseudo-speech signal (*speech signal extracting means*)
- switch outputs either stripped or newly encoded information (elem. 217, FIG. 2) (*output means*)

Gay et al. do not disclose bit rate information adding means (vocoder type designator)

Strawczynski et al. teach attaching vocoder type designator for each data frame leaving the switch (Col. 8, lines 34-41 and elem. 318, FIG. 3A).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. as taught by Strawczynski et al. in order to allow the system to operate with variable rate vocoders. This is necessary because all data encoded with a specific

rate on the transmitter side needs to carry information identifying the encoding scheme so that the appropriate decoder can be applied on the receiving side.

As per claim 11, Gay et al. disclose outputting coded speech signals extracted by speech signal extracting means (elems. 168, 169, FIG. 2)

Gay et al. do not disclose using "information reduction means for reducing information amount of the coded speech signal", "wherein said speech signals output means selects"

- coded speech signal including bit rate identification information or
- coded speech signal whose information amount is reduced by said information reduction means

Strawczynski et al. teach:

- attaching vocoder type designator (*bit rate identification information*) for each data frame leaving the switch (Col. 8, lines 34-41) and (elem. 318, FIG. 3A).
Hence, signals encoded with vocoders in Strawczynski's system will inherently carry bit rate identification information.
- the use of vocoders of different types (242, FIG. 2), where the vocoders encoding at higher compression rate will inherently have an ability to reduce the amount of information of the coded speech signal, as compared to the vocoders at encoding at lower compression rates. (*information reduction means*)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. as taught by Strawczynski in order to allow the system to encode various types of data using the most efficient encoding types. This would allow the system adjust

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to varying network conditions, as it would be able to send signals encoded at higher compression ratio (less information, worse signal quality) at times when the network load is high, and lower compression ratio (more information, better signal quality) when the network load is low. In addition, because each encoded signal carries its own identification, other switches would be able to properly decode it based on the signal's identifier.

4. Claims 7, 9, 10 are rejected under 35 U.S.C. 103(a) as being obvious over Gay et al. in view of Strawczynski et al., and further in view of Gvozdanovic (6,600,720), as applied to claim 1.

As per claim 7, Gay et al. and Strawczynski et al. do not disclose load measuring means.

Gvozdanovic teaches the traffic management system that monitors load on the link and changes speech encoding in response to network congestion (Col. 9, lines 30-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. and Strawczynski et al. as taught by Gvozdanovic. in order to perform congestion control and transmit less data when the network is in congested state.

As per claim 9, Gay et al. and Strawczynski et al. do not disclose measuring load based the bearer occupancy of the line.

Gvozdanovic teaches the use of CAC that takes the number of used trunks into consideration. (Col. 8, lines 65-66)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. and Strawczynski as taught by Gvozdanovic in order to estimate

the load of the network using the number of active calls through the switch, because the number of active calls in the network is a good indicator of the overall load of the network.

As per claim 10, Gay et al. and Strawczynski et al. do not disclose measuring load based the bearer occupancy of the line.

Gvozdanovic teaches the use of CAC that takes the amount of used bandwidth on the link into consideration. (Col. 8, lines 65-66)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. and Strawczynski as taught by Gvozdanovic in order to estimate the load of the network using the current available/consumed bandwidth on the transmission line, because the network load is directly measured by the load of the links in the network.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Gay et al. and Strawczynski et al., and Gvozdanovic, and further in view of Lemieux (5,615,255), as applied to claim 7.

Gay et al. and Strawczynski et al. and Gvozdanovic do not disclose measuring load based on the number of control messages.

Lemieux teaches the measuring of network load using the monitoring of control messages (Col. 2, lines 23-27).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. and Strawczynski et al. and Gvozdanovic as taught by Lemieux to order to estimate the load of the network using the number of messages on a control channel,

because this would indicate the control load of the network and subsequently the general health of the network.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being obvious over Gay et al. in view of Piasecki et al. (5,177,453)

The recitation of “variable bit rate function of varying a transmission bit rate of the coded speech signal in accordance with a load on the equipment” has not been given patentable weight because the recitation occurs in the preamble. Here, the body of the claim does not depend on the “varying a transmission rate ... in accordance with a load on the equipment” for completeness and, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Gay et al. disclose:

- *tandem pass-through* function (Col. 2, lines 19-24), so that a switch has a mode where it detects the already encoded signals and passes them through in the original encoded form (hence, maintaining the fixed encoded rate) rather than decoding and encoding the signals again.
- supervisory signals to communicate the presence of encoding from one switch to another (Col. 2, lines 26-31) and codec controllers (214, 314, FIG. 2) that are responsible for assigning the bit rates of transmitted signals in response to supervisory signals (*bit rate fixing means*). Note that Gay's system operates in an environment where only a single trunk channel is used for transmission. Thus, it

would need additional methods for distinguishing between signals transmitted on multiple trunks/bearer channels if it were to operate in a network with larger capacity.

Gay et al. do not disclose "message notifying means for supplying a transmission line with a message indicating a trunk channel in a pass-through state", where "message notifying means, it outputs" bearer channel number or trunk channel number.

Piasecki et al. teach the use of message generator for a system with multiple trunk channels that creates control messages carrying information about bearer stream, trunk channels and the type of traffic. (Col. 7, lines 62-67). By interpreting the message information, the system can appropriately process and redirect the arriving encoded signals without having to decode them.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. to have message notifying means as taught by Piasecki et al. in order to have a more sophisticated message relaying means than in Gay et al. This would allow Gay's system to distinguish between signals transmitted on different trunks/bearer channels in a pass-through state, if it were to operate in a larger network with multiple trunk/bearer channels. In addition, the use of the messaging means would allow the system to avoid decoding the arriving signals when in pass-through state, because it would obtain the un-encoded control information (trunk, bearer number, encoding type) about the arriving encoded signal from the corresponding messages.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being obvious over Gay et al. in view of Sourani et al. (6,549,515)

The recitation of “variable bit rate function of varying a transmission bit rate of the coded speech signal in accordance with a load on the equipment” has not been given patentable weight because the recitation occurs in the preamble. Here, the body of the claim does not depend on the “varying a transmission rate ... in accordance with a load on the equipment” for completeness and, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Gay et al. disclose:

- *tandem pass-through function* (Col. 2, lines 19-24), so that a switch has a mode where it detects the already encoded signals and passes them through in encoded form rather than decoding and encoding the signals again.
- codec controllers (214, 314, FIG. 2) that detect the signals indicating the beginning of pass-through and pass the instructions to encoders (Col. 4, lines 37-51), which in turn transmit the encoded signals to the transmission line (168,169, FIG. 2)

Gay et al. do not disclose the use of “bit banks” nor cliques of bearer and message channels.

Sourani et al. teach the use of “bit banks” for varying bit rate in networks with varying traffic loads, where “bit banks” are used to form back-up transmission channels in times when the network traffic loads are heavy. (Col. 1, lines 29-40)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. as taught by Sourani et al. in order to allow the system described by Gay et al. to perform better under increasing traffic conditions. The use of "bit banks" would allow the switch operating in pass-through state to save valuable network resources.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being obvious over Gay et al. in view of Sourani et al., as applied to claim 5, and further in view of Piasecki et al. (5,117,453)

Gay et al. and Sourani do not disclose the use of cliques consisting of data sequences of message and several bearer channels. Gay et al. also does not disclose the use of "bit banks".

Piasecki et al. teach the use of multiple bearer channels and signaling channels (Col. 5, line 23-30)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Gay et al. and Sourani et al. as taught by Piasecki et al. in order to allow the system to have multiple bearer channels and perform better under increasing traffic conditions. The use of "bit banks" would allow the switch to operate in networks with heavy loads. The use of multiple bearer channels would allow the network to carry larger amounts of data.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

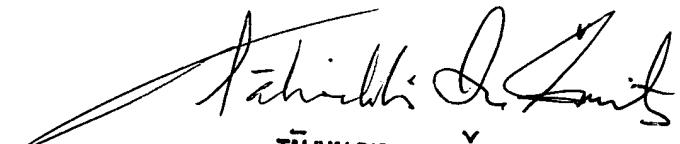
Wainwright (5,488,715) teaches changing the transmission rate in response to network load measurements.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Brant whose telephone number is (703) 305-8954. The examiner can normally be reached on Mon. - Fri. (8:30am - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 306-3011. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Tech Center 2600 receptionist whose telephone number is (703) 305- 4700.

DB
2/6/04



TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER